

## EAST Search History

## EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S2	1	(10/584642).APP.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/02/22 22:02
S3	6	("20020064598"   "20030124798"   "20040235191"   "5420072"   "5895267"   "6207557").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/22 22:55
S4	22	("5279857"   "5308655"   "5514908"   "5552340"   "5573978"   "5591672"   "5654235"   "5665640"   "5705442"   "5975912"   "5994181"   "6005291"   "6028360"   "6140223").PN. OR ("6207557").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/22 23:44
S5	1	("6548402").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2011/02/23 00:35
S6	15	("4535000"   "4897709"   "5378501"   "5416045"   "5420072"   "5462895"   "5593511"   "5610106"   "5840628"   "5866213").PN. OR ("6548402").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/23 00:36
S8	11	("5246881"   "5508066"   "5545574"   "5567243").PN. OR ("5840628").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 02:09
S9	27	partial WITH pressure WITH (titanium tetrachloride OR "TiCl. sub.4") WITH (ammonia OR "NH. sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 10:16

S10	36	partial WITH pressure WITH (titanium tetrachloride OR "TiCl. sub.4") SAME (ammonia OR "NH. sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 11:20
S11	9	S10 not S9	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 11:21
S12	31	partial WITH pressure WITH (titanium tetrachloride OR "TiCl. sub.4") AND partial WITH pressure WITH (ammonia OR "NH. sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 11:37
S13	4	S12 not S9	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 11:37
S14	17	ratio WITH pressure WITH (titanium tetrachloride OR "TiCl. sub.4") WITH (ammonia OR "NH. sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 11:38
S15	3425	reaction WITH limited AND (titanium tetrachloride OR "ticl. sub.4")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 23:58
S16	609	supply and limited AND reaction WITH limited AND (titanium tetrachloride OR "ticl. sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 23:59
S17	57	supply and limited AND reaction WITH limited SAME (titanium tetrachloride OR "ticl. sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/24 23:59
S18	30	supply near limited AND reaction WITH limited AND (titanium tetrachloride OR "ticl. sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 00:04

S19	1080	CVD AND ALD AND (titanium tetrachloride OR "ticl.sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 00:09
S20	77	first WITH (titanium nitride OR tin) WITH CVD AND ALD AND (titanium tetrachloride OR "ticl.sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 00:09
S21	27	first WITH (titanium nitride OR tin) WITH (low OR lower) WITH temperature AND (titanium tetrachloride OR "ticl.sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 11:04
S22	20	second WITH (titanium nitride OR tin) WITH (high\$3 OR increas\$4) WITH temperature AND (titanium tetrachloride OR "ticl.sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 11:09
S23	60	(subsequent\$4 OR another OR second) near5 (titanium nitride OR tin) SAME (high\$3 OR increas\$4) WITH temperature AND (titanium tetrachloride OR "ticl.sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 11:13
S24	10	flow near3 rate near3 ratio SAME (titanium tetrachloride OR "ticl.sub.4") SAME (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 12:01
S25	158	flow near3 rate near3 ratio AND (titanium tetrachloride OR "ticl.sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 12:08

S26	9	second near3 flow near3 rate near3 ratio AND (titanium tetrachloride OR "ticl. sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 12:08
S27	22	("5279857"   "5308655"   "5514908"   "5552340"   "5573978"   "5591672"   "5654235"   "5665640"   "5705442"   "5975912"   "5994181"   "6005291"   "6028360"   "6140223").PN. OR ("6207557").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 12:13
S28	15	("4535000"   "4897709"   "5378501"   "5416045"   "5420072"   "5462895"   "5593511"   "5610106"   "5840628"   "5866213").PN. OR ("6548402").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 14:19
S29	65	second WITH sccm WITH (titanium tetrachloride OR "ticl. sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 14:29
S30	36	second WITH (titanium nitride OR "TiN") SAME sccm WITH (titanium tetrachloride OR "ticl. sub.4") AND (ammonia OR "NH.sub.3")	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 14:48
S31	0	S29 AND (fast\$4 WITH rate)	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 14:54
S32	0	S29 AND (quick\$4 WITH rate)	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 14:55
S33	54	S29 and rate WITH sccm	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 15:00
S34	37	S29 AND (deposition WITH rate)	US-PGPUB; USPAT; USOCR	ADJ	ON	2011/02/25 15:01

**EAST Search History (Interference)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S35	7	(seishi near2 murakami.in. OR tada near2 kunihiro. in.) and (method OR process).clm. and (titanium tetrachloride OR "ticl.sub.4").clm. AND (ammonia OR "NH.sub.3").clm.	US-PGPUB; USPAT; UPAD	ADJ	ON	2011/02/25 15:22
S36	4	(tokyo near4 limited.as.) and (method OR process).clm. and (titanium tetrachloride OR "ticl.sub.4").clm. AND (ammonia OR "NH.sub.3").clm. and ratio.clm.	US-PGPUB; USPAT; UPAD	ADJ	ON	2011/02/25 15:41

**2/ 25/ 2011 5:01:33 PM****H:\ EAST Workspaces\ Production****\ Murakami\_10584642\_titanium\_nitride\_film\_ratio\_ticl4\_nh3.wsp**